



UNITED STATES DEPARTMENT OF COMMERCE
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/281.059	03/09/99	ASAO	Y Q53539

MM12/0816
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EXAMINER

PEREZ, G

ART UNIT	PAPER NUMBER
2834	

DATE MAILED: 08/16/99

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/281,059

Applicant(s)

Asao et al.

Examiner

Guillermo Perez

Group Art Unit

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☐ Responsive to communication(s) filed on _____.

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-3 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-3 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☒ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☒ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____.

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 3

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Prior Art (APA) in view of Benford, deceased et al. (U. S. Pat. No. 5,243,248).

APA discloses a rotor (1) for an automobile alternator comprising:

a pair of field cores (12a, 12b) each having a cylindrical base portion (121a, 121b) and a plurality of claw-shaped magnetic poles (122a, 122b) projecting from the outer circumferential edges of said base portions (121a, 121b), said field cores (12a, 12b) being secured to a rotating shaft (11) facing each other such that the end surfaces of said base portions (121a, 121b) are in close contact with each other and said claw-shaped magnetic poles (122a, 122b) intermesh with each other;

a cylindrical bobbin (16) having a cylindrical portion (16a) and a pair of first and second annular flange portions (16b) projecting perpendicularly from both ends of said

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cylindrical portion (16a), said bobbin (16) being fitted over said base portions (121a, 121b) of said pair of field cores (12a, 12b); and

a field winding (15) wound a predetermined number of turns into multiple layers on said cylindrical portion of said bobbin. However, APA does not disclose that said field winding has a flat shape in which a pair of opposite flat surfaces are parallel,

said field winding being wound onto said cylindrical portion of said bobbin such that said pair of opposite flat surfaces face the inner circumferential side and the outer circumferential side, respectively, relative to the radial direction.

Benford, deceased et al. disclose that said field winding (26) has a flat shape (figures 5a and 5e) in which a pair of opposite flat surfaces are parallel (figure 5e),

said field winding (26) being wound onto said cylindrical portion of said bobbin such that said pair of opposite flat surfaces face the inner circumferential side and the outer circumferential side, respectively, relative to the radial direction for the purpose of achieve a high packing fraction in its construction.

It would have been obvious at the time the invention was made to modify the rotor for an automotive alternator of APA and provide it with field winding which has a flat shape and in which a pair of opposite flat surfaces are parallel,

said field winding being wound onto said cylindrical portion of said bobbin such that said pair of opposite flat surfaces face the inner circumferential side and the outer circumferential side, respectively, relative to the radial direction as disclosed by Benford, deceased et al. for the purpose of increasing the packing factor of the winding

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during construction while reducing eddy current, hysteresis losses and power consumption.

3. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over APA in view of Benford, deceased et al. as applied to claim 1 above, and further in view of Harris et al. (U. S. Pat. No. 5,539,265).

However, APA nor Benford et al. disclose a vibration-suppressing ring fitted on the inner circumference of said claw-shaped magnetic poles of said pair of field cores.

Harris et al. (U. S. Pat. No. 5,539,265) disclose a vibration-suppressing ring (33) fitted on the inner circumference of said claw-shaped magnetic poles (12 and 14) of said pair of field cores for the purpose of preventing vibration of the fingers of pole pieces as the rotor assembly rotates within the alternator assembly as a whole.

It would have been obvious at the time the invention was made to modify the rotor for an automotive alternator of APA and provide it with a vibration-suppressing ring fitted on the inner circumference of said claw-shaped magnetic poles of said pair of field cores as disclosed by Harris et al. (U. S. Pat. No. 5,539,265) for the purpose of minimizing the vibration of the magnetic poles during rotation of the rotor assembly thus reducing audible noise generated by the alternator assembly.

4. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over APA in view of Benford, deceased et al. as applied to claim 1 above, and further in view of Harris et al. (U. S. Pat. No. 5,892,313).

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However, APA nor Benford et al. disclose that permanent magnets are fitted between said claw-shaped magnetic poles of said pair of field cores.

Harris et al. (U. S. Pat. No. 5,892,313) disclose that permanent magnets (34) are fitted between said claw-shaped magnetic poles (12 and 14) of said pair of field cores for the purpose of increasing power output without increasing the machine's physical size.

It would have been obvious at the time the invention was made to modify the rotor for an automotive alternator of APA and provide it with permanent magnets that are fitted between said claw-shaped magnetic poles of said pair of field cores as disclosed by Harris et al. (U. S. Pat. No. 5,892,313) for the purpose of increasing the power output of the machine while keeping a machine with a small size.

Conclusion


5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. York (U. S. Pat. No. 5,361,011) teaches a rotor comprising a noise ring typically used in the art in order to reduce acoustic noise generated by the rotation of a rotor.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guillermo Perez whose telephone number is (703) 306-5443 . The examiner can normally be reached on Monday through Thursday from 8:30 to 6:00. The examiner can also be reached on alternate Fridays.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez , can be reached on (703) 308-1371. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-5841.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.


NESTOR RAMIREZ
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GP

August 13, 1999